AMRAD NEWSLETTER

Amateur Radio Research and Development Corporation July 1983

AMRAD Meetings

July 18 Meeting:

Sandy, WB5MMB will show off his portable TTY, and Dick, W3HWN will discuss the HEX Bulletin Board System.

August 1 Meeting:

Bob, WB4APR will discuss various direction finding techniques.

September 19 Meeting:

To be announced.

Phase IIIB Is Up!

Congratulations are in order to AMSAT for the successful launch of AMSAT OSCAR 10. It achieved orbit June 16, 1983, and everything appears to be fine so far. AMSAT has a lot to be proud of, but they should be especially proud of the people that hung in there and worked doubly-hard after the first Phase III went down. Again, CONGRATULATIONS AMSAT!!

The FCC Deregulates Amateur Identification Requirements

Inside this issue of the AMRAD Newsletter is a copy of a recently released FCC order that reduces tremendously the identification requirements of an Amateur Radio station using specialized communication techniques. This came as a surprise to most of us, but it is a welcome sign that the FCC still has trust in the Amateur service.

The gist of this order is that anyone using an internationally recognized standard of communication no longer needs to identify in morse code or voice in addition to the mode he/she is using. This applies to RTTY, AMTOR, packet radio, and fast-scan ATV.

This change comes at a great time, as more and more packet radio stations are getting on the air. Packet radio will probably be affected by this change more than the other modes, as packet radio is very much a time-multiplexed system, relying on a free channel where many stations can transmit short bursts of data. If several stations are on a packet channel, and each one had to identify with CW at less than twenty wpm, there would come a point where most of the channel time was occupied with basically information-less identifications.

I can't help but wonder if the acceptance of the AX.25 packet standard helped to bring this change about. As Paul, W4RI pointed out to the FCC during one of his many trips down there, AX.25 has the callsigns of both the originator and the destination station in the address field, thereby satisfying the new FCC requirements with every frame sent! This frees up a lot of memory space in the packet controller card, and a lot of channel time on the air.

Old Dominion 100-Mile Endurance Ride

From Bill Pala, WB4NFB:

On the weekend of 11 June, a number of us from AMRAD, along with hams from several other clubs, ventured forth into the mountains of Virginia to endure blistering sun and boring mosquitoes in order to provide communications for the Old Dominion 100-Mile Endurance Ride/Run.

Streams were forded and mountains climbed. Sandy, WB5MMB and Bob, WB4APR built a porta-peater which worked flawlessly the whole weekend. Sandy and myself installed the repeater on top of a 2000 foot peak in the Massanutten mountains, nearly wedging the Blazer permanently between two trees up on the ridge crest. A great discovery was made, it is much easier to go up a mountain in a 4-wheel drive than it is to come down (that is in a controlled manner). In the middle of the day Saturday, the repeater sounded weak so Bob, over the insistances of Bill and Sandy who kept telling Bob he could't make it to the ridge line, made two trips up the mountain to recharge the batteries on the repeater, one packing a generator and charger on his back. The repeater power consuption was figured based on a 20% duty cycle, while the actual was near 95%. Lunch and dinner were distributed to all on station by Deborah Borden and Nancy Sanders.

Several lessons were learned and will be corrected for next year. A good time was had by all and the group is already planning next years effort. The following AMRAD members participated:

WB4NFB--Bill Pala
WB5MMB--Elton Sanders
K8MMO---Dave Borden
WB4APR--Bob Bruninga
KB4DAJ--Nancy Sanders
WB5DBC--Howard Cunningham
WB3KDU--Hal Feinstein

In addition 20 other hams from several other clubs also participated.

Honeywell Teleconference Radio Net

The next Honeywell Teleconference Radio Net is scheduled for September 1. Barry Goldwater, K7UGA will be the speaker.

Upcoming Hamfests

The Baltimore Radio And Television Society (BRATS) will hold their Maryland Hamfest on July 31, 1983 at the Howard County Fairgrounds.

The Winchester Hamfest will be held on August 7, 1983 at the Clarke County Ruritan Fairgrounds, Berryville VA. Talk-in is on 146.22/82 or 146.52 simplex.

THE DEAF AND THE TTY

Barry Strassler, KA3KDF
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Silver Spring, MD 20910
301-589-3006 (Voice/TTY)

Random Thoughts on Radio, Computers, and Electronics

Robert H. Weitbrecht has become a silent key. He passed away the first week of June. He was hit by a car in the dark while walking his dog, and never regained consciousness. Mr. Weitbrecht, as you may know, came up with the first TTY modem in 1964, and the deaf communications network is indebted to his pioneering efforts. He was one of the first deaf radio hams, and was very prominent in the RTTY field during its infancy.

A difference a year would make for me. I have become a licensed ham, along with Nan Sanders. Both of us are products of Paul Rinaldo's teachings and patience. Now that he is in Connecticut with the ARRL, we surely miss him.

One of the first lessons I have learned is that if you are trying to locate a hard-to-get chip, after contacting four or five electronic supply stores in the area and coming up empty-handed, is to ask one of the local hams. I was trying to find a 7413 chip that I needed for the Apple RTTY interface, and out of frustration told Terry about it. Alas, Terry said he has some of the chips in question somewhere in his ham shack. Thanks, Terry!

Is there such a thing as a ham that keeps his ham shack in a very neat and orderly fashion? If there is, then I have not yet met him. I'm beginning to suspect that electronic ingenuity and untidiness both go hand-in-hand as a symbol of normalcy among dedicated hams.

I have in my file about twenty-five to thirty letters from people that have responded to my appeals in QST for names of deaf, deafened, and hearing-impaired hams. Pretty soon I hope to come up with something to get all of us organized.

I am no expert on television, but I have been called on a half dozen occasions to help deaf people install their Telecaption Adaptors properly. Most of them "overwire" the cables, and to the wrong terminals. Also, many of them do not realize that the key to a clear picture is the proper antenna hookup. There are diagrams that clearly show people how to hook up their decoders, but they still botch it up.

There is now on the market, a $149 TDD, which undersells the next lowest price by about seventy dollars. I have looked at these low cost TDDs, and cannot help but wonder about the quality and workmanship. The plastic cases seem flimsy, and could possibly crack. On one model, there is a single screw holding the top and bottom case pieces together. There isn't even a grommet to hold the screw in place. Suppose the plastic cracks, then the screw will lose its "hold", and the only way to hold the upper and lower case halves together would be with scotch tape. I am not joking.

When I proudly tell my deaf friends that I am a licensed ham, their initial reaction is "How can you be a ham if you can't hear?". They become incredulous when I tell them that there is much more to ham radio than just voice, that there are morse code, digital, and television mediums.

One afternoon recently, an electronic manufacturer was sounding me out on the feasibility of developing a braille-TTY for the deaf-blind people. I fell out of my chair when he said his price per braille-TTY unit is $5000.00.

After reading about the pros and cons of no-code entry-level class license for novice hams, I am opposed to it. At first I did not understand the issues and thought it would be a boon to deaf would-be hams. But now I feel that when one has to spend hours brushing up on the code and on boning up on his electronic theory, and then sweat through the FCC exams, he/she would then appreciate this hobby much more than a neophyte given a license without "working for it", and may not appreciate it as much.

Every hobby has its stereotypes. With computers, a user is either a hacker or a non-hacker. With ham radio, a user is either an appliance operator or an under-the-hood mechanic.

With the advent of the omnipresent computer, there are hams that embrace computers, and other hams that shy away from them. It makes me wonder because when one studies readio theory, he comes across many definitions that are used interchangeably between radios and computers.

I grew up in New York City, and unfortunately for me, I paid no attention to the now razed Radio Row in lower Manhattan. Visiting the city very recently, I looked up the ham stores, hoping to find the likes of EEB (Electronic Equipment Bank) or the Comm Center, but I couldn't find any. Oh yes, there were electronics stores, but they all stocked TV's, radios, stereos, etc. If one of them advertised ham wares, the ham equipment was usually on the back shelf at the back counter. I was somewhat disappointed.

When I see cordless phones being advertised, I predict that someone will come up with a TDD that will work with cordless telephones.

PROTOCOL

David W. Borden, K8MMO
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Sterling, VA 22170
703-450-5284

Packet Public Service

I think I have discovered a new application for packet radio, public service. In the past, most public service work has been accomplished on 2 meters using FM voice and repeaters (if available). Through some mechanism, which is not yet clear, I was roped into participating in the Old Dominion Ride, a combination horserace and footrace over a 100 mile course in Virginia's backwoods by Front Royal. It turned out to be tiring, but fun. AMRAD took radios into the field, including the now famous WB4APR portable repeater (two IC2ATs and some wire mostly) and provided executive communication for the ride administrative folks. It worked very well and we proved that we could work togeather, even though tired, and provide a service. The only problem was the method of communication was voice..yuk! No digital communications for two days. My typing fingers itched for action. Then formed in my mind a plan for next year. Packets everywhere!

The stated mission of AMRAD at this event was to supply executive communication, that is, a method of communication between the officials of the race. We did that, without a doubt, very well. But, that is not really ALL they wanted. They observed that we were in touch with all points of the course (cleverly, WB4APR and WB5MMB had placed the repeater so well). So, how come we don't know where all the horses are? Who is in the lead? Who has dropped out? Who was thrown out? Where is runner X? Is runner X the person just spotted running backwards off the track? For some reason, the officials were not concerned that these questions were not in our charter. Obviously if we could talk 50 miles away we can get the poop right now...right? Actually we could have, but that was the job of another group and we didn't want to jump in their rice bowl. Also, we had a channel full of activity just keeping the doctors, vets, blacksmiths and officials on the track. Extra traffic we did not need. Ah, here is the place packet radio could help, assuming we can find some additional packeteers to help next year. Notice, the operative word in that last sentance is "additional". We can not use the exact same people talking on voice this year as we need them next year to talk again and handle the executive traffic. The packeteers must accomplish a second mission, to provide race results to HQ (the 4H center).

The device that could make this work is the famous "AMRAD BLUE BOX". These are computers that we purchased for less than a song. They are Z-80 based systems, using the STD bus familiar to industrial engineers. They employ Zilog SIO boards which Jon Bloom, KE3Z, has made to packet with the addition of a kludge board containing two state machines and some RS232 drivers (level shifters). This computer has now been made into a packet repeater and could be used for other purposes. First, a word of warning. Do not write in and ask to purchase, steal or receive a donation of one of these "BLUE BOXES". There are no more available. However, AMRAD digital freaks each have two, so this project is possible.

So, first you take a BLUE BOX (or similar type computer) and write some new software for its' ROMS. Jon has always envisioned this box doing multiple connections. Basically, one computer maintains logical circuits with many other packet stations. We would actually have a star network with the BLUE BOX as net control. At each horserace station (or at least six of them) we station a packeteer in his car with his portable packet station. They connect up with net control at the 4H base camp. As horses pass their position, they flash the packets to net control containing the horse's number. At net control, Nan Sanders proposes to have an additional computer taking in all this good packet information. The current status of all horses can be posted on a video display (or several simultaneously) for all horsey people to gaze upon. Runner information might be covered also, but that is a harder problem. Runner stations are usually down the road a piece from horsey stations (runners don't like horses?). The on-station packeteer might have it tough getting runner information. If any was obtained, it could be relayed to net control. Nan would just love to code up the program that puts up the video display and it would be fun. Jon will have the multiple connection code going soon anyway for another local application. The real problem is those car mounted (an powered) portable packet stations. They do not exist as I am typing this.

Terry Fox, WB4JFI, proposes that the way to accomplish portable packet is to take a TRS-80 Portable Computer Model 100 (cost about $1000) and connect up some packet chip to its' bus with some software so it can packet away. It is a very nice portable terminal, but only two AMRAD people own one (Terry and Scott, W3VS). Plus, Scott is leaving town after establishing himself as an active packeteer. So, we must solve three problems in a year:

1) Multiple connection net control packet station.

2) Portable packet stations costing less than a TRS-80.

3) Software for the display station at race headquarters.

If anyone out there has any ideas, send article to Terry at AMRADS postal drawer and we will run it up the flagpole at a pizza meeting and see how it works.

AMATEUR TELEVISION MAGAZINE

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Before the Federal Communications Commission FCC 83-247
Washington, DC 20554 33301

In the Matter of)
)
Amendment of Part 97 of the)
Commission's Rules Pursuant to the)
Commission Regulatory Review)
Program.)

ORDER

Adopted: May 26, 1983 Released: June 1, 1983

By the Commission:Commissioner Fogarty not participating; Commissioner Sharp absent.

1. Pursuant to the Commission's Regulatory Review program, the rules addressed herein are being amended or deleted, as appropriate, in order to eliminate unnecessary restrictions and rules, codify requirements of the Communications Act of 1934, as amended, or make editorial corrections necessary for simplifiction or clarification of the rules. The affected rule sections are: ~ 97.13, 97.32, 97.61, 97.69, 97.81, 97.84, 97.99 and 97.173.

2. We are deleting ~ 97.32(f), which currently prohibits the renewal of Interim Amateur Permits, since renewals may be justified in circumstances where there is an extraordinary delay in the issuance of permanent amateur operator and station licenses.

3. We are revising ~97.13(c) and ~97.13(d) to correct an omission in order that amateur operator license renewal applicants may submit a photocopy of their license in place of the original document. We are deleting ~ 97.67(a)(3), and revising ~~ 97.61(e), 97.69(a)(2) and 97.67(b)(3) in order to rectify certain unintentional inconsistencies in our recent Order authorizing the use of the digital code "AMTOR" on Amateur Radio Service frequencies below 50 MHz. /1/ We are revising ~ 97.99 to delete the reference to the obsolete Form 452-C. We are also revising ~ 97.173(d) to change the incorrect reference to ~ 97.41 to the correct reference, ~ 97.42.

4. We are adding a new paragraph to ~97.81 which codifies into the rules the existing requirements of the Communications Act of 1934, as amended, that specify that the Commission has the "...authority to inspect all radio installations Act, treaty, or convention...." /2/ This amendment also codifies longstanding Commission policy in that the authority to inspect amateur radio stations is a general condition of grant of all amateur licenses.

5. Finally, we are revising ~97.84 to allow station identification for amateur stations to be made by video when specific transmission standards are used, or, under some circumstances, by using certain common digital codes. This will relieve a number of burdens amateur operators have faced when required to identify "packet radio" transmissions, television transmissions where audio cannot be practically transmitted on the same operating frequencies, and transmissions where international third party traffic is exchanged and identification of the station being communicated with is required. /3/

6. We are dispensing with the prior notice and comment procedure provisions of the Administrative Procedure Act (APA) in this proceeding since the subject rule changes are either interpretative (~~ 97.13, 97.69, 97.81, 97.99) or relate to agency procedure (~97.32), or since it is unlikely that any objections would be received in view of the obvious benefits which are being conferred and we, therefore, find it unnecessary (~~ 97.61, 97.69, 97.84, 97.99). /4/ The APA's effective date requirements are also not applicable to these rule amendments because they either relieve a restriction, or are interpretative. /5/ Certain rule changes also addressed merely make editorial corrections and the APA, therefore, does not apply (~ 97.173).

7. Inasmuch as general notice of proposed rule making is not required, the Regulatory Flexibility Act of 1980 does not apply.

8. Accordingly, IT IS ORDERED That, effective June 15, 1983, Part 97 of the Commission's Rules and Regulations, 47 CFR Part 97, IS AMENDED as set forth in the attached Appendix. This action is taken pursuant to authority contained in Sections 4(i) and 303 of the Communications Act of 1934, as amended. Further information on this matter may be obtained by contacting: Maurice J. DePont, (202) 632-4964, Federal Communications Commission, Private Radio Bureau, Washington, DC 20554.

FEDERAL COMMUNICATIONS COMMISSION

William J. Tricarico
Secretary

Attachment: Appendix

/1/ 48 FR 7457 (February 22, 1983).

/2/ See Section 303(n) of the Communications Act of 1934, as amended.

/3/ Article 25, ~ 5 of the International Radio Regulations (Geneva, 1979) permits identification signals in the form of, among others, "a telegraph code compatible with conventional printing equipment." Furthermore, the television emissions which we are authorizing to be identified by video are those which can only take place on frequencies where international propagation is unlikely.

/4/ See 5 U.S.C. 553(b)(3).

/5/ See 5 U.S.C. 553(d).

APPENDIX

Part 97 of the Commission's Rules and Regulations, 47 CFR Part 97, is amended as follows:

1. In Section 97.13, paragraphs (c) and (d) are revised to read as follows:

~ 97.13 Renewal or modification of operator license.

(c) Application for renewal and/or modification of an amateur operator license shall be submitted on FCC Form 610 and shall be accompanied by the applicant's license or a photocopy thereof. Application for renewal of unexpired licenses must be made during the license term and should be filed within 90 days, but not later than 30 days, prior to the end of the license term. In any case in which the licensee has, in accordance with the provisions of this chapter, made timely and sufficient application for renewal of an unexpired license, no license with reference to any activity of a continuing nature shall expire until such application shall have been finally determined.

(d) If a license is allowed to expire, application for renewal may be made during a period of grace of five years after the expiration date. During this five-year period of grace, an expired license is not valid. A license renewed during the grace period will be dated currently and will not be backdated to the date of its expiration. Application for renewal shall be submitted on FCC Form 610 and shall be accompanied by the applicant license or a photocopy thereof.

2. In Section 97.32, paragraph (f) is deleted in its entirety.

3. In Section 97.61, the parenthetical phrase in paragraph (e) is revised to read as follows:

(when type F1 or A2J emissions are employed in these bands, the radio or audio frequency shift, as appropriate, shall not exceed 1000 Hz)

4. In Section 97.69, paragraph (a)(3) is deleted in its entirety and paragraphs (a)(2) and (b)(3) are revised to read as follows:

~ 97.69 Digital communications.

(a) * * *

(2) When type A2, F1 or F2 emissions are used on frequencies below 50 MHz, the radio or audio frequency shift (the difference between the frequency for the "mark" signal and that for the "space" signal), as appropriate, shall not exceed 1000 Hz. When these emissions are used on frequencies above 50 MHz, the frequency shift, in hertz, shall not exceed the sending speed, in baud, of the transmission, or 1000 Hz, whichever is greater.

(b) * * *

(3) The International Radio Consultative Committee (CCIR) Recommendations 476-2 and 476-3 (commonly known as AMTOR); provided that the code, baud rate and emission timing shall conform to the specifications of CCIR 476-2 (1978) or CCIR 476-3 (1982), Mode A or Mode B.

5. Section 97.81 is revised to read as follows:

~ 97.81 Authorized apparatus.

(a) An amateur station license authorizes the use, under control of the licensee, of all transmitting apparatus at the fixed location specified in the station license which is operated on any frequency or frequencies allocated to the Amateur Radio Service, and, in addition, authorizes the use, under control of the licensee, of portable and mobile transmitting apparatus operated at other locations.

(b) The apparatus authorized for use by paragraph (a) of this section shall be available for inspection upon request by an authorized Commission representative.

6. In Section 97.84, paragraph (g) is revised to read as follows:

~ 97.84 Station identification.

(g) The identification required by this section shall be given on each frequency being utilized for transmission and shall be made in one of the following manners:

(1) By telegraphy using the international Morse code (if this identification is made by an automatic device used only for identification, the code speed shall not exceed 20 words per minute);

(2) By telephony using the English language (the Commission encourages the use of a nationally or internationally recognized standard phonetic alphabet as an aid for correct telephone identification);

~ (3) By telegraphy using any code authorized by 97.69(b), when the particular code is used for transmission of all or part of the communication or when the communication is transmitted in any digital code on frequencies above 50 MHz; or

(4) By video using readily legible characters when A5 emissions are used, the monochrome portions of which conform, at a minimum, to the monochrome transmission standards of ~ 73.682(a)(6) through ~ 73.682(a)(13), inclusive (with the exception of ~ 73.682(a)(9)(iii) and ~ 73.682 (a)(9)(iv)).

7. In Section 97.99, the introductory paragraph is revised to read as follows:

~ 97.99 Stations used only for radio control of remote model crafts and vehicles.

An amateur radio station in radio control operation with a mean output power not exceeding one watt may, when used for the control of a remote model craft or vehicle, be operated under the special provisions of this section, provided that a writing indicating the station call sign and the licensee's name and address is affixed to the transmitter.

8. In Section 97.173, paragraph (d) is revised to read as follows:

~ 97.173 Application for RACES station license.

(d) If the application is for a RACES station to be in any special manner covered by ~ 97.42, those showings specified for non-RACES stations shall also be submitted.

AMRAD Amateur Radio Research and Development Corporation

Membership Application/Renewal

Mail to: William P. Pala, WB4NFB
5829 Parakeet Drive
Burke, VA 22015

See reverse for overseas mailing rates.

	Annual
Dues: Regular	$15
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Full-time student	5

Please make checks payable to AMRAD.

Name_____
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Address_____
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I agree to support the purposes of the Corporation.

Class License_____ ☐ARRL Member
Interests:
☐Packet Radio ☐Spread Spectrum
☐RTTY ☐Deaf TTY
Computer model_____
Microprocessor type_____

*Signature*_____

The Amateur Radio Research and Development Corporation (AMRAD) is a worldwide club of over 500 amateur radio and computer experimenters. It is incorporated in Virginia and is recognized by the U.S. Internal Revenue Service as a tax-exempt scientific and educational organization.

The purposes of AMRAD are to: develop skills and knowledge in radio and electronic technology; advocate design of experimental equipment and techniques; promote basic and applied research; organize technical forums and symposiums; collect and disseminate technical information; and, provide experimental repeaters.

Meetings are on the 1st Monday of each month at 7:30 P.M. at the Patrick Henry Branch Library, 101 Maple Ave E, Vienna, VA. If the first month is a holiday, an alternate date will be announced in the newsletter. Except for the annual meeting in December, meetings are normally reserved for technical talks - not business.

WD4IWG/R is an open repeater for fm voice and digital communications, especially for experimental modes. It is located at Tyson's Corner, McLean, VA. It features semi-private autopatch available to licensed members. Frequencies are: 147.81 MHz in, 147.21 MHz out. The repeater director is Jeff Brennan, WB4WLW.

WB4JFI/R is a 1200-baud half-duplex packet repeater in Falls Church, VA and may be accessed via WD4IWG/R frequencies.

WB5MMB/R is a 1200-baud simplex packet repeater on 147.585 MHz from Vienna, VA, soon to become K3NA/R from Frederick, MD.

The AMRAD CBBS, 703-734-1387, is operated by Terry Fox, WB4JFI. The system accepts 110, 300, 450 and 600-baud ASCII, Bell 103.

Handicapped Education Exchange, 301-593-7033, is operated by Dick Barth, W3HWN. HEX accepts 110/300-baud ASCII and Baudot deaf TTY/TDD calls.

AMRAD is affiliated with the American Radio Relay League (ARRL), Foundation for Amateur Radio (FAR), Northern Virginia Radio Council (NOVARC) and the Mid Atlantic Repeater Council (T-MARC).

The AMRAD Newsletter is mailed monthly to members and other clubs on an exchange basis. Technical articles, product announcements, news items, and other copy relating to amateur radio and computing are welcome. Honorariums at a rate of $0.10 per 50-character printed line ($20 maximum per author per issue) are paid for original material accepted. Classified ads are free to members. Commercial ad inquiries are invited. The editor reserves the right to reject or edit any portions of the copy. Items should be mailed by the 8th of the preceeding month to Editor, AMRAD Newsletter, P.O. Drawer 6148, McLean, VA 22106. Full permission for reprinting or quoting items is granted provided that credit is given to both the author and the newsletter. Mailing to U.S. and possessions is by 3rd Class bulk mail. Canadian and Mexican addresses add US$2 for postage. Overseas readers add US$8 for air mail or US$2.30 for surface.

AMRAD officers for 1983 are:

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David W. Borden, K8MMO	703-450-5284	Alternate
Jeffrey Brennan, WB4WLW	703-354-8541	Director Repeater Trustee
Robert E. Bruninga, WB4APR		Vice President
Terry L. Fox, WB4JFI	703-356-8334	Director President Editor CBBS Sysop
William P. Pala, Jr.,	703-323-8345	Director Secretary
Paul L. Rinaldo, W4RI	203-666-5599	Director
Elton A. Sanders, WB5MMB	703-281-1298	Director

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